4 - Service Tools

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Service Tools

Note: Service tools used on the NPL-2 may also be used on the RH-19/RH-50. However, the latest version of the FLA-30, with small adaptions, is preferred for the RH-19/RH-50.

List of service tools

The table below gives a short overview of service tools that can be used for testing, error analysis and repair of product RH-19/RH-50, refer to various set-ups.

Type Designator	Description	Part Code
CPL-10	RF Coupler 850-1900	0770548
FLA-30	POS flash adapter	0770472
PCS-1	DC power cable	0730012
SCB-3	DC cable	0730114
XCS-1	Service cable	0730218
XCS-4	Modular cable	0730178
FLS-4S	POS flash dongle for E/A area POS flash dongle for APAC area POS flash dongle for Americas area	0080541 0080542 0080543
FPS-8	Parallel flash prommer (inc. AXS-4, AXS-8, universal power supply)	0080321
	Printer cable (inc. in FSP-8 sales pack)	0730029
FPS-8C	Flash prommer box	0080396
	Phoenix Service SW Phoenix Service SW in CD-ROM	8410533 0775322
JBV-1	Docking station	0770298
MJF-17	Docking station adapter	0774282
MJS-52	Service jig	0770476
MJS-53	Solder jig	0774281
LRK-2	LGA repair kit 1	0273645

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JVB-1 docking station (product code: 0770298) with MJF-17 docking station adapter

The JVB-1 docking station has been designed for calibration and software update use. The MJF-17 docking station adapter makes signal connections to the phone. JVB-1 and MJF-17 are used as one unit.

JVB-1 main electrical functions include the following:

- adjustable VBATT calibration voltage, current measurement limit voltage "VCHAR", current measurement calibration "ICHAR"
- adjustable ADC calibration voltage via BTEMP and BSI signal
- BTEMP and BSI calibration resistor
- signals from FBUS to the phone via parallel jig
- control via FBUS or USB
- Flash OK/FAIL indication

In calibration mode JVB-1 is powered by external power supply 11-16V DC. In flashing power for the phone can be taken from FPS-8 or external power supply 11-16V DC.

MJF-17 docking station adapter (product code: 0774282)

Docking station adapter for assembled RH-19/RH-50 phones. MJF-17 supports testing, flashing, energy management calibration. If used in conjunction with CPL-10, also RF function testing is possible.

Features include:

- compatible for JBV-1
- easy phone attachment and detachment
- reliable phone locking
- switch for reliable detection of phone attachment
- replaceable test pins
- internal SIM holder with interface to phone SIM reader

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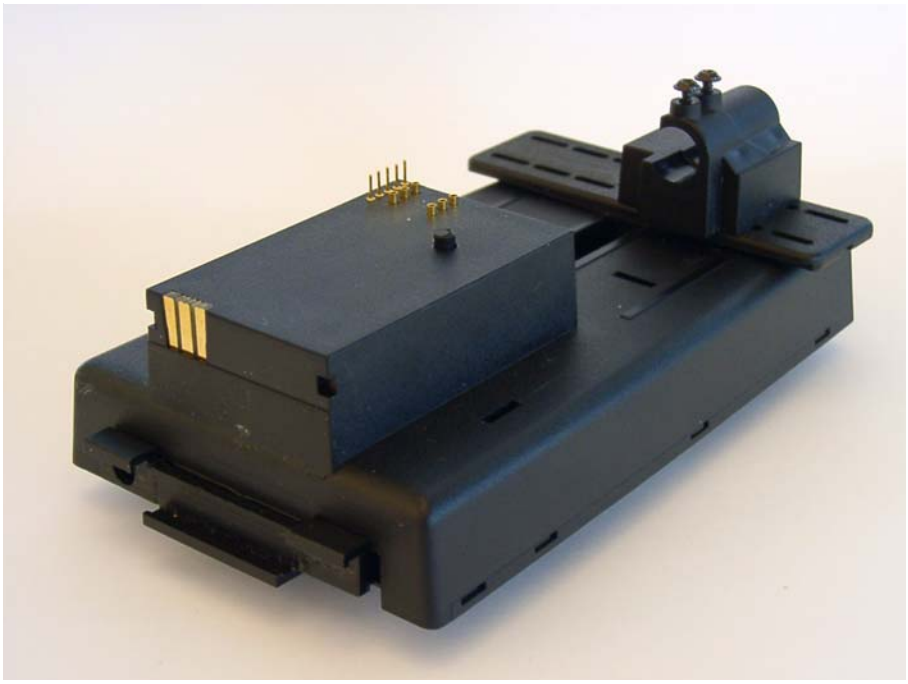
View of MJF-17



CPL-10 antenna coupler (product code: 0770548)

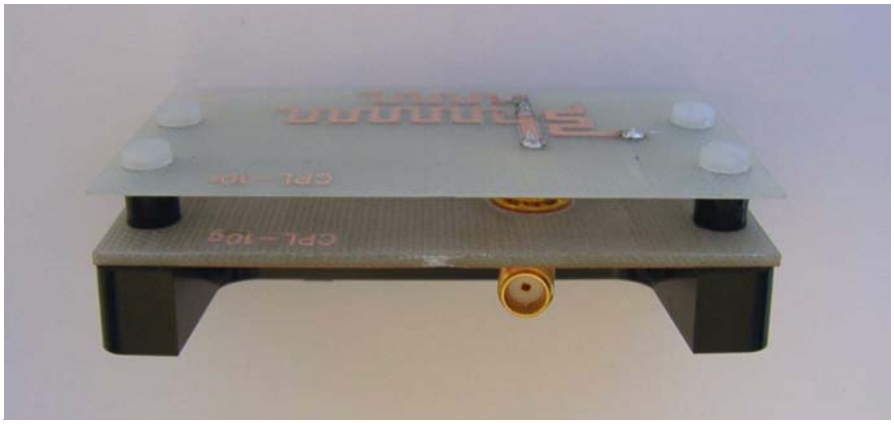
RF antenna coupler for use with MJF-17.

Extends MJF-17 to allow RF function tests in GSM bands 850, 900, 1800 and 1900 MHz.

Features include:

- easy attachment to MJF-17 without use of tools
- reliable RF connection to phone module under test
- low attenuation and small "ripple" over the width of each GSM band

View of CPL-10



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MJS-52 module repair jig (product code: 0770476)

Repair jig for RH-19/RH-50 phone module that allows full phone function.

General features include:

- easy phone module insertion and removal, proven jig locking mechanism
- ESD-proof base material and jig design
- unlimited operation of a disassembled phone module
- unrestricted access to phone module components
- access to system connector for accessory testing
- jig SIM holder with interface to phone SIM reader
- LCD assembly mounted on MJS-52 allows key and display function test
- microphone, ear speaker and integrated handsfree speaker supplied on jig for testing
- LOCAL/NORMAL switch
- push-buttons for side (=volume) key function test
- access to phone module POWER-ON push-button
- possibility for IrDA testing
- quick and easy repair of jig components

View of MJS-52

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Power supply features

- jig and phone power supply via 3mm DC jack, fuse
- power stabilization and voltage regulator on jig (can be bypassed by jumper)
- reverse and over-voltage protection of jig and phone module

Communication and status LED's

- green: Power supply
- green: MBUS activity
- orange: FBUS activity
- jumper to disable LED's for precise phone module current consumption measurements

Spare parts

- spring loaded test pins (used in upper part, can be replaced by soldering)
  Test pins (10pcs / plastic bag) 0770442
- both ends spring loaded test pin (used in lower part, can be replaced by hand after disassembly of lower PCB)
  Test pins (10pcs / plastic bag) 0770557
- fuse inside holder
  FUSE 2A SMD, manufacturer is "LITTLEFUSE", type 154002T
- wing screw M3x20
  (open)

Usage hints

- **before first use** verify setting of power supply jumper on the rear (=bottom PCB) of the jig; if power supply is >4.2 V, make sure jumper enables power regulation of the jig in order to prevent overvoltage for the phone module under test and the jig
- in case of **flashing problems** in the jig, verify the switch on the upper part of the jig is in position "Flash"; position "Accessory" is intended for ACI tests with connected ACI-communication enabled accessories, such as car kits or camera headsets

MJS-53 soldering jig (product code: 0774281)

Soldering jig is used for module level repair, either as fixation in µBGA rework places or when there is need to hold a module on the work bench for any other repair.

Features include:

- one hand phone module insertion
- convenient locking mechanism
- four (optional mount) rubber feet allow usage also on repair benches
- fixation of phone module in both ways possible (bottom or top side up)

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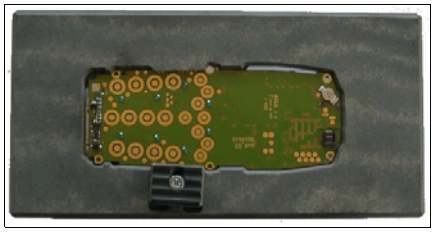
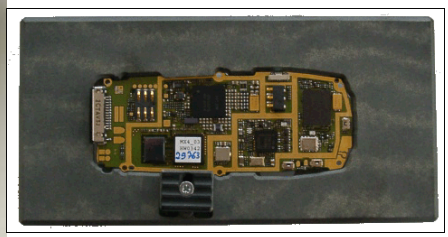
- ESD proof material
- standard uBGA jig thickness and outer dimensions

Views of MJF-53





(note: phone module not included)

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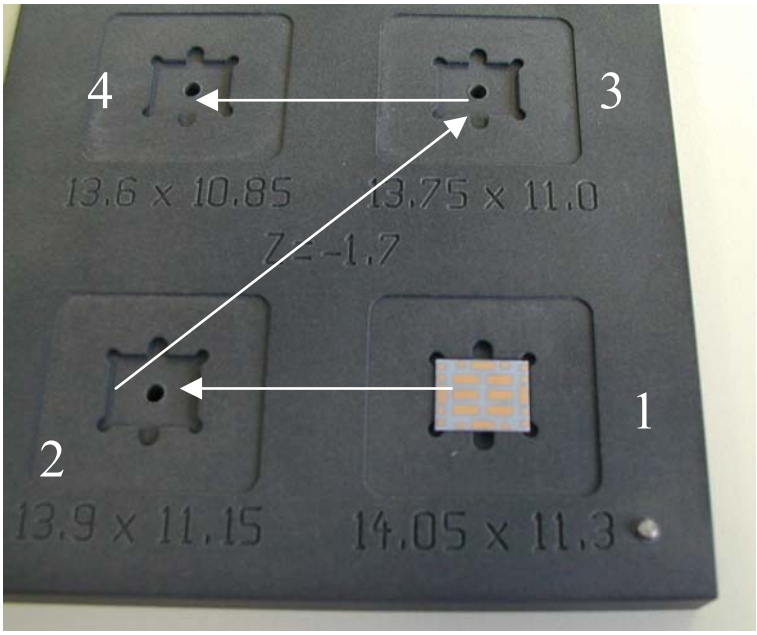
LRK-2 LGA component rework kit

Type designator	Description	Part code
LRK-2 (0273645)		
MJS-76	LGA rework Jig	0770417
SES-2	Stencil	0770415
SPS-2	Spreader	0770471

Rework procedure

Due to the large mechanical tolerance of the power amplifiers the following procedure is necessary:

1 Put power amplifier into the MJS-76 rework jig, the PA should be placed in the best fit location, this is determined by firstly placing it in the largest location if this is to large re-position the pa in the next size location, this should be carried out until the best fit location is found.



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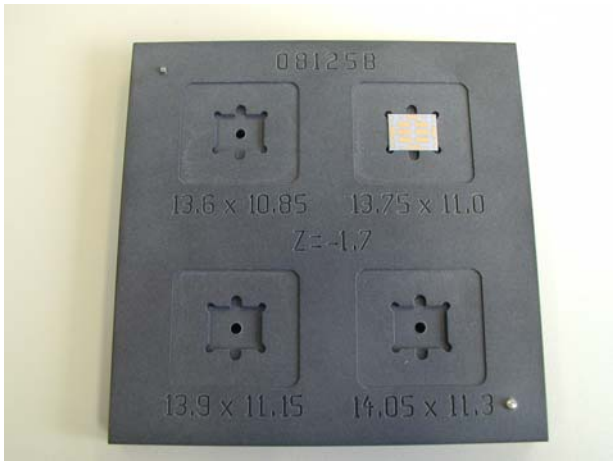
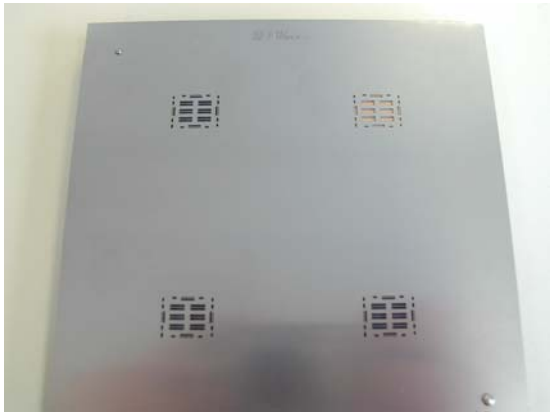
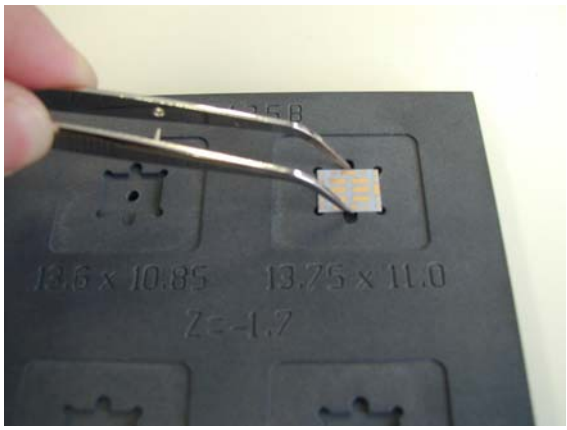
2 Once the best fit location has been found, leave the PA there and put stencil on top of the jig and PA.





3 Put soldering paste on the PA properly.

4 Remove stencil and the PA from the jig.



5 Start soldering process.

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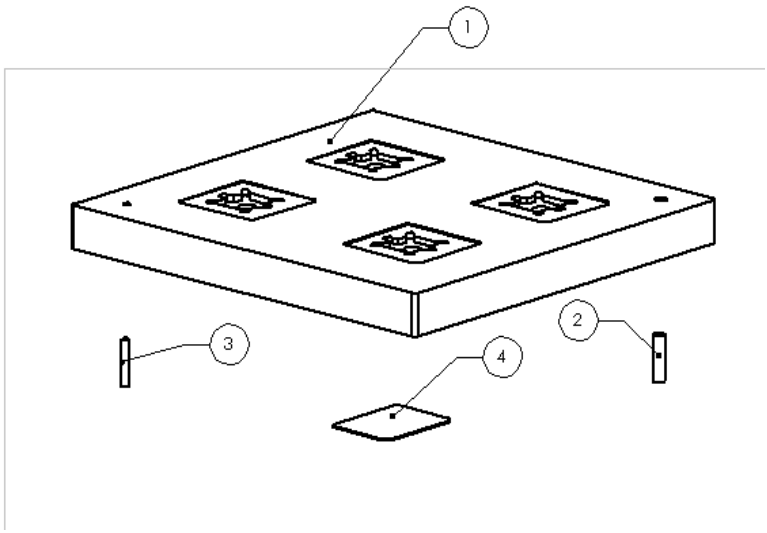
MJS-76 PA LGA rework jig (product code 0770417)

Introduction

This tool is used in LGA type component reworking purposes in central service centers. It consists of the following parts:

Part Number	Name of Part	Material Code	Drawing number	Qty
1	Frame		SME5S910	1
2	Cylindrical pin 3x12	640b003		1
3	Cylindrical pin 2x12	640B012		1
4	Type label	9380601		1

Exploded view



FPS-8 flash prommer (product code: 0080321)

The flash prommer FPS-8 is used with e.g. MJF-13 and JVB-1. Power is supplied to FPS-8 from the universal power supply.

The sales pack includes:

- FPS-8 flash prommer 0750123
- FPS-8 activation sheet 9359289
- Universal power supply 0680032
- AXS-4 service cable (D9-D9) 0730090
- Printer cable 0730029

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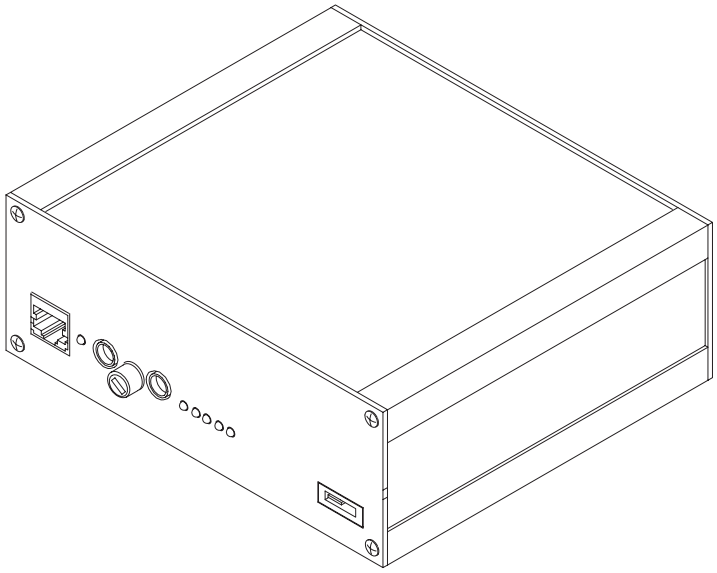
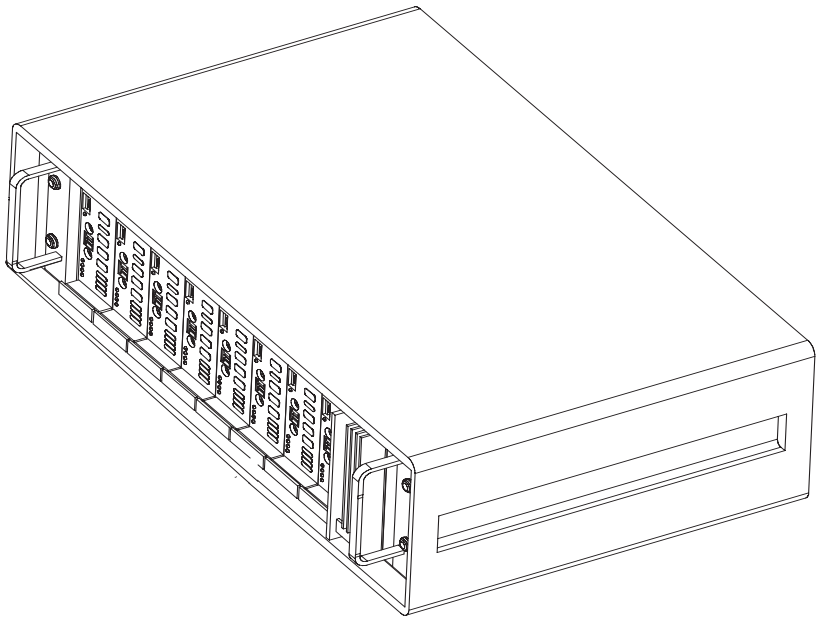
View of FPS-8



FPS-8C parallel flash prommer (product code: 0080396)

The parallel flash prommer FPS-8C is used with MJF-13 and JVB-1. Flash programming can be done to maximum of 8 phones parallel. FPS-8C consists of eight SF11C programming cards. SF11C card is functionally identical to FPS-8.

View of FPS-8C



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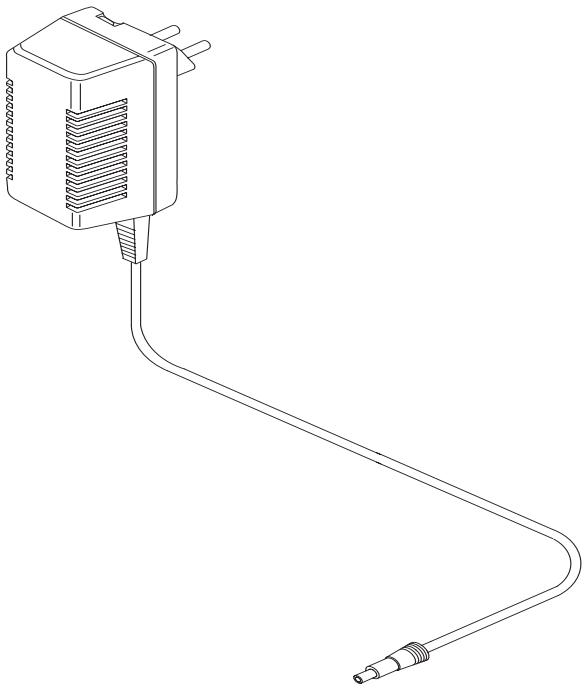
ACF-8 universal power supply (product code: 0680032)

ACF-8 universal power supply is used to power FPS-8. ACF-8 has 6 V DC and 2.1 A output.

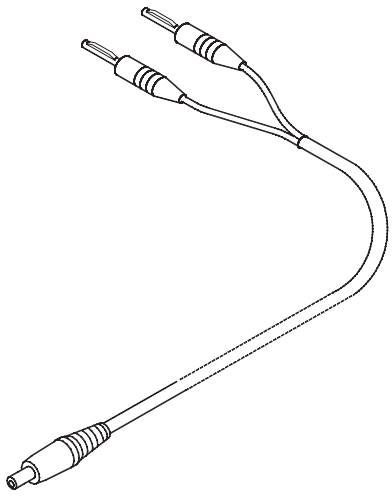
View of ACF-8



FLC-2 DC cable (product code: 0730185)

The FLC-2 is used to supply a controlled operating voltage.

View of FLC-2



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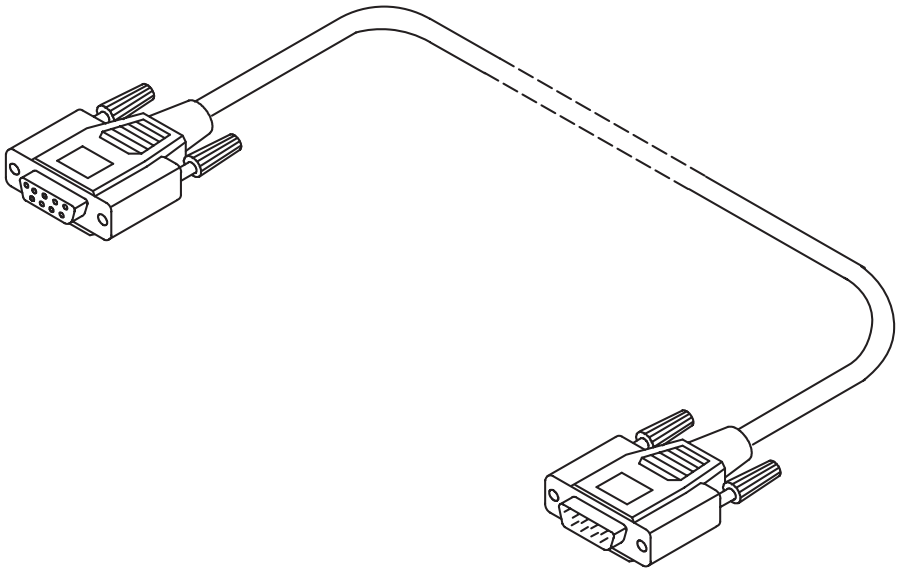
AXS-4 service cable (product code: 0730090)

The AXS-4 D9-D9 service cable is used to connect two 9 pin D connectors e.g. between PC and FPS-8. Cable length is 2 meters.

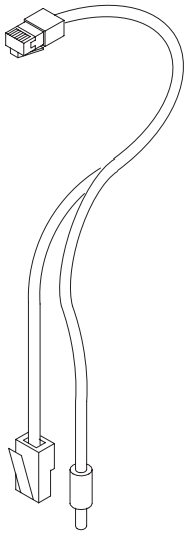
View of AXS-4



XCS-1 service cable (product code: 0730218)

The XCS-1 service cable is used to connect FLS-4 to FLA-27.

View of XCS-1



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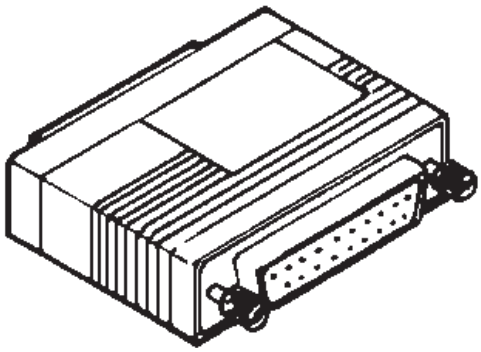
SW security device PKD-1 (product code: 0750018)

SW security device is a piece of hardware enabling the use of the service software when connected to the parallel (LPT) port of the PC. Without the dongle present it is not possible to use the service software. Printer or any such device can be connected to the PC through the dongle if need ed.

Caution: Make sure that you have switched off the PC and the printer before making connections!

Caution: Do not connected the PKD-1 to the serial port. You may dam age your PKD-1!

View of SW security device



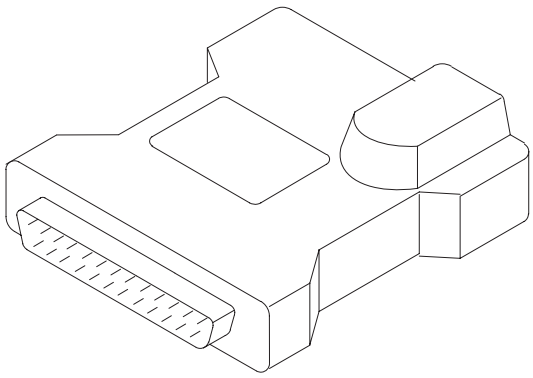
FLS-4S POS (point of sale) flash device (sales pack)

FLS-4S is a dongle and flash device incorporated into one package, developed specifically for POS use.

Product code

Sales Pack - Europe/Africa	0080541
Sales Pack - APAC	0080542
Sales Pack- US	0080543

View of FLS-4S



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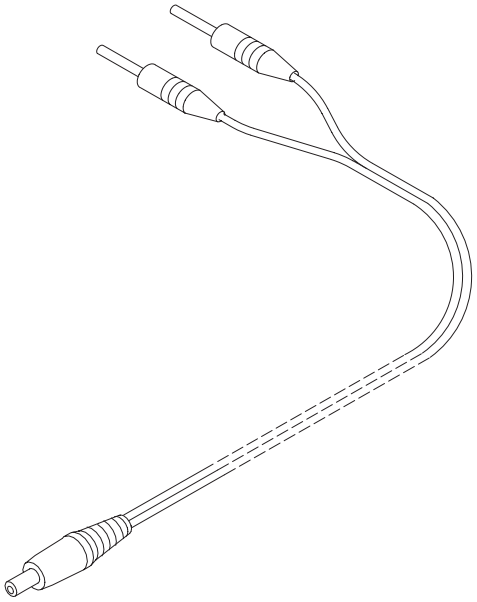
PCS-1 power cable (product code: 0730012)

The PCS-1 power cable (DC) is used to connect e.g. JVB-1 to FPS-8.

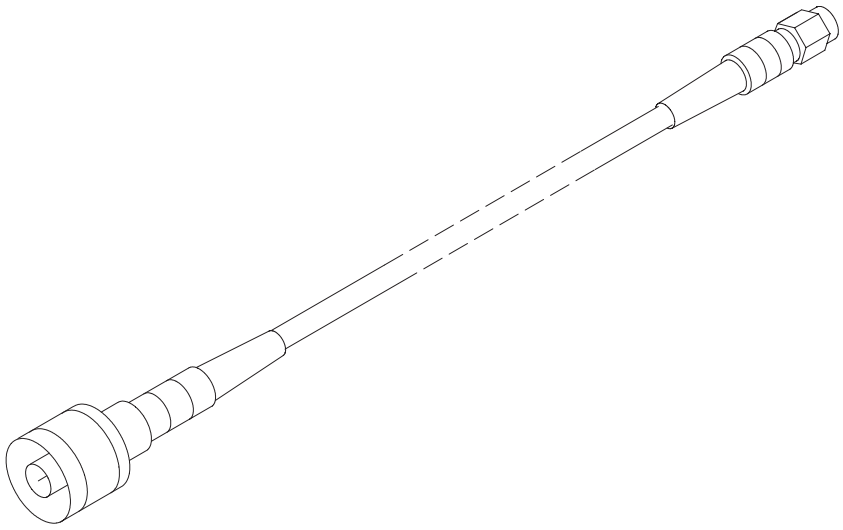
View of PCS-1



XRF-1 RF cable (product code: 0730085)

RF cable XRF-1 is used to connect e.g. module jig MJS-38 to RF measurement equipment.

View of XRF-1



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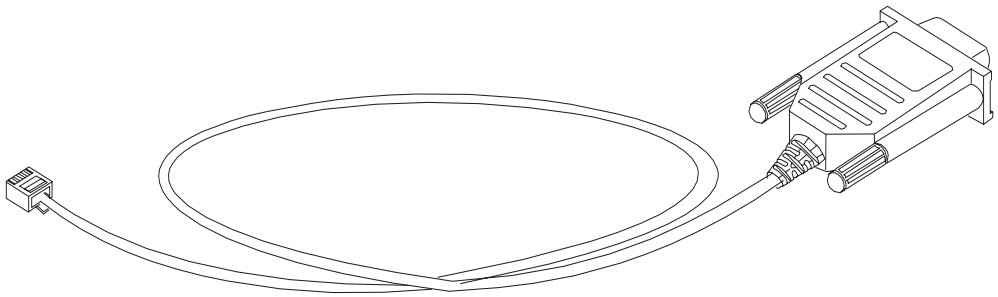
DAU-9S MBUS cable (product code: 0730108)

The MBUS cable DAU-9S has a modular connector, and is used with be tween PC's serial port and e.g. module jig MJS-38.

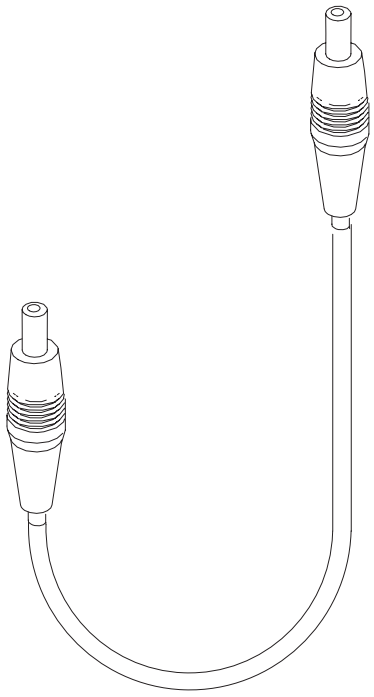
View of DAU-9S



SCB-3 DC cable (product code: 0730114)

The DC cable SCB-3 is used to connect e.g. JVB-1 to the phone.

View of SCB-3



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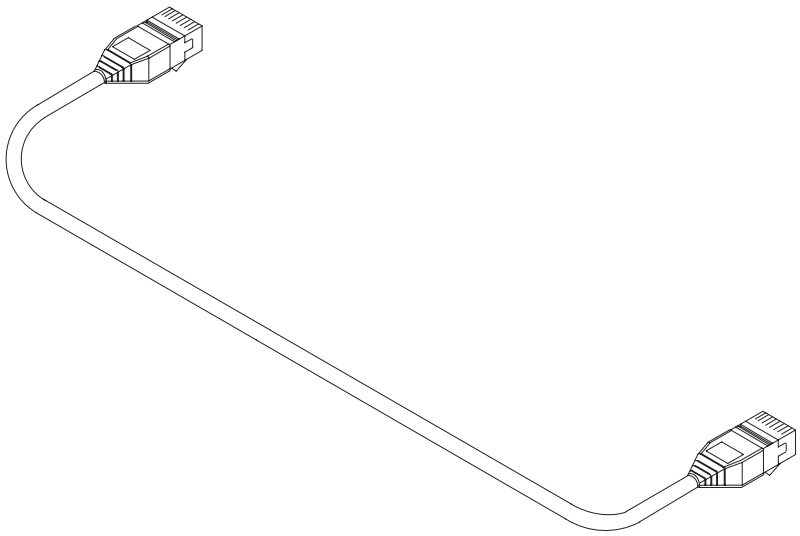
XCS-4 modular cable (product code: 073017)

XCS-4 is a shielded cable (one specially shielded conductor) modular cable for flashing and service purposes.

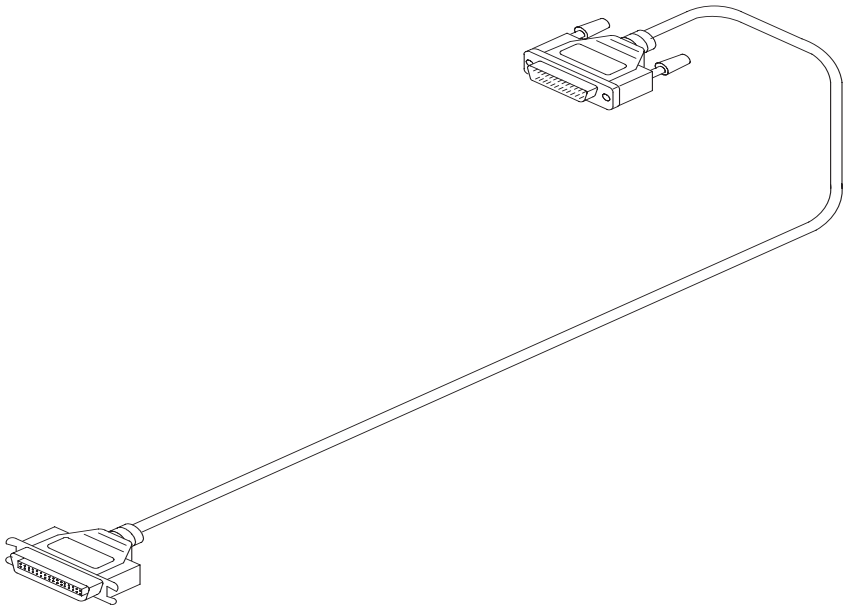
View of XCS-4



Printer cable (product code: 0730029)

This cable is used to connect the PC to FPS-8.

View of printer cable



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FLA-30 flash adapter (product code: 0770472)

Point of sales flash adapter for RH-19/RH-50 phones.

FLA-30 establishes a simple environment for SW update purposes and connects to the same flash test pattern and the phone battery contacts. When using FLA-30 the phone SIM card must be removed and the SIM flap has to be locked close.

Features include:

- flashing and testing of the attached phone
- overvoltage and reverse polarity protection of adapter and attached phone
- green LED: power supply valid and attached to the phone (3.5V<Vcc<7V)
- red LED: overvoltage condition, phone power supply disconnected (Vcc>7V)
- shielded 10-pin Western connector towards flash equipment or PC
- 3mm DC-jack for phone and adapter power supply
- phone battery contacts (VCC, GND, BSI)
- flash test pattern pins

View of FLA-30

Spare parts

There are no serviceable parts inside FLA-30, and FLA-30 is not designed for disassembly. Only serviceable part are the spring loaded test pins that can be replaced without soldering and disassembly. Used test pin type is SX-1-J-2.0-G from manufacturer IDI.

Bent pins can be extracted from adapter's receptacle using a tool. Torn off pins can be replaced using a slowly spinning 0.8 mm. For more detail, please refer to the Service Tool Troubleshooting section.

Test pins (10pcs / plastic bag) NMP 0770450

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